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ABSTRACT

This is a cross-sectional, descriptive study of the motivational profiles of 524 students from grade 7 through the freshman year in college. A new Motivation Inventory was administered to all students. This instrument measures six classes of needs referred to by Abraham Maslow as physiological, safety, love and belonging, esteem, self-actualization and need to know. The results partially support Maslow's prepotency principle. Scores of males and females diverge abruptly in the 10th grade. Parallels exist with Robert E. Nixon's cognitive stage of development. It appears that while the ninth grade teacher may be able to operate with similar motivating devices for both sexes, the teacher of upperclassmen must allow for different activities and payoffs for boys and girls. (Author)

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CHANGES IN STUDENT MOTIVATIONAL STRUCTURE DURING ADOLESCENCE: A PILOT STUDY

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The adolescent period has for many years been the subject of a myriad of books and articles. During this transitional period, a great number of changes take place in a very short time.

Textbooks abound which describe the physical, social, cognitive and emotional changes characteristic of adolescence. Some of these allude to motives such as need for affiliation that become exceptionally strong during this period.

This study focuses exclusively on the motivational changes that take place between the ages of 13 and 19. More specifically, it is a cross-sectional investigation of the motivational structure of youngsters from pre-adolescence through young adulthood.

Theoretical Model

Abraham H. Maslow's (1970) model of human motivation is basic to this investigation (see Figure 1). He outlined seven sets of needs arranged in a hierarchy of prepotency. Ordinarily the needs lower in the hierarchy must be satisfied before the higher ones become operative.

According to Maslow, Physiological, Safety, Love and Belonging, and Esteem needs are cyclical and become activated by periodic deprivation. He calls these maintenance needs. The Self-actualization, Need to Know and Aesthetic needs are termed growth needs and are primarily aimed at self-realization.

While Maslow believed the growth needs were especially important for humans, he was convinced that they had little effect on behavior until the maintenance needs were satisfied.

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In addition to describing the motivational changes that take place in adolescence, this study constitutes a test of Maslow's prepotency hierarchy. If a motive becomes relatively potent only when those below it are relatively satisfied, then the strength of the needs on either side of the most potent one should decrease in the exact sequence of that hierarchy.

For example, if the Esteem need is the most potent for seventh and eighth grade girls, then the potency scores for Love and Belonging, Safety and Physiological needs should decrease in that order. In addition, potency scores for the Self-actualization, Need to Know and Aesthetic motives should decrease in that order.

Procedure

Subjects

All available students in grades 7-12 (N = 441) in the Illinois State University Laboratory Schools and 83 volunteers from the ISU General Psychology courses were chosen as subjects (see Table I). Admission procedures for the lab schools have produced a student group which is roughly representative of the public school population in the Bloomington-Normal area.

Instrumentation

A 30-item Motivation Inventory was developed from six phrases describing activities thought to be closely related to each of Maslow's need categories except Aesthetic. The activities and the needs they are thought to represent are listed below.

Need	Activity
Physiological (P)	"Taking care of my own physical needs: food, clothing, shelter, etc."
Safety (S)	"Keeping safe and secure so that no one can hurt me."
Love and Belonging (L)	"Finding and keeping close friends who think a lot of me."
Esteem (E)	"Becoming a good person who is looked up to by others."
Self-actualization (SA)	"Pursuing hobbies that are satisfying to me."
Need to Know (C)	"Finding out about new things. Satisfying my curiosity."

Each activity was coupled at random with every other activity resulting in 15 pairs. Students were asked to indicate "the one in each case for which you presently spend more time and energy."

The potency score for each motive is equal to the number of times its activity was indicated. The possible scores for each motive range from 0-5.

Validity

The inventory is thought to have face validity since each activity is a rather straightforward transformation from its motive.

Reliability

The Motivation Inventory was administered twice to 95 seventh and eighth graders with an interim of one week. Product moment correlation coefficients between the two sets of scores were computed for each motive category. Table II shows that the correlations ranged from .57 to .66, averaging .61.

Administration

The Motivation Inventory was administered to all 7-12 graders during their homeroom periods. The college freshmen were tested in small groups at times convenient to their schedules.

Results

The Prepotency Question

When the mean potency scores for the entire sample (N = 524) were computed (see Table III), Maslow's prepotency principles were illustrated perfectly except for a juxtaposition of the Safety and Physiological needs. Esteem was rated strongest (3.01) with growth needs decreasing in order (SA = 2.99; C = 2.87). The lower maintenance needs decreased as expected, except for Safety (L = 2.99; S = .67; P = 2.47). The apparent differences among the SA, E and L scores, however, are probably too small to be significant.

Only seven of the twelve subgroups followed the hierarchy in the same way. Each of the other five contained one or more additional exceptions.

Comparison of Most Potent Motives

Since it is well established that girls reach puberty about two years before boys and are exposed to differential social pressures, the cross-sectional data has been separated for the sexes. When one looks at the strongest need patterns throughout adolescence, this separation seems justified.

Table III shows that for girls the Love and Belonging and Esteem motives have the two highest potency scores at all levels except the twelfth grade when Self-actualization tops the list.

For boys, however, Self-actualization and Need to Know head the potency list in all grades except two. Ninth grade boys scored second

highest in Esteem, while that category was rated most potent by university freshman boys.

Cross-sectional Descriptions of Each Motive

Figure 2 is a cross-sectional picture of the mean Need to Know scores of students from seventh grade through the freshman year in college. You will note that the girls' scores seem to be relatively stable, reaching their peak (2.84) in the ninth grade.

The boys' Need to Know scores on the other hand are lowest at the ninth grade and peak at the twelfth grade. They remain higher than the girls' scores in all grades except ninth.

A sharp differentiation in the scores of the two sexes is apparent at the tenth grade, or their sophomore year in high school. This "tenth grade phenomenon" appears with other needs.

Figure 3 shows the mean Self-actualization scores at various age levels throughout adolescence. The girls' scores appear relatively stable until they make a precipitous jump to 3.46 at the twelfth grade level. Their lowest point appears in the college group.

The boys' Self-actualization scores are higher than the girls' in all grades but twelfth. They peak at the tenth grade and then decline regularly to reach a low ebb in the college freshman group. The "tenth grade phenomenon" is again apparent here.

Figure 4 shows the mean Esteem need scores for all groups. The boys' scores are lower than girls' at every grade level, nearly converging at the ninth grade. The scores diverge again in the tenth grade, and the girls remain higher throughout.

Figure 5 shows the Love and Belonging need scores during the various years of adolescence. Girls' scores remain higher throughout, being

closest to the boys in the ninth grade, but remaining approximately parallel from the tenth grade on.

Figure 6 shows the mean Safety need scores for each of the groups. The boys' needs are a bit stronger in all groups. They are considerably stronger in the seventh and eighth grade and ninth grade groups, but nearly converge with the girls' safety scores at the tenth grade. They remain close and parallel for all older groups. This appears to be the only example of scores that converge at the tenth grade.

Figure 7 displays the mean Physiological need scores for all adolescent years. Although the boys' scores are higher in the seventh and eighth grade, they drop below the girls' scores at the ninth grade level. While the girls' scores steadily rise through the eleventh grade level, they drop way below the boys in the twelfth grade group. Interestingly, this coincides with the unusually large jump we earlier reported in girls' Self-actualization needs in the same grade.

Discussion and Application

Because of some questions about the validity of the Motivation Inventory and because the differences in the mean motive scores for the entire population are so small, we do not consider the results a serious test of Maslow's prepotency hierarchy.

It seems quite clear, however, that as measured by this instrument, the Safety needs of every group are at the bottom of the hierarchy, below the Physiological needs.

In an earlier paper (1943), Maslow explained that the hierarchy was not as rigid as it sounded and that such juxtapositions did occur.

Teachers of adolescents should take note of the fact that while girls appear to be most strongly motivated by their needs for Love and Belonging

and Esteem at almost all levels, Self-actualization and Need to Know are most potent for boys. We would, therefore, expect girls to learn well in groups of their friends and to respond to activities and teacher comments that affect their self-concepts. It is probably important that adolescent girls have teachers that like them and communicate this clearly. Puzzles, experiments, novel approaches and a focus on sports and hobbies would appear to be effective ways to motivate adolescent boys.

The "tenth grade phenomenon" seems to indicate that the second year of high school is accompanied for the most part by a separating of the motive scores of boys and girls. This coincides with what Nixon (1966) has called the "cognitive stage" of adolescent development. He believes that this is an age of high anxiety in which adolescents are especially sensitive to the world's injustices and are re-examining their own values and beliefs. Muuss (1968) points out that a large number of theorists agree that the end of the transitional early adolescence period comes at 15 or 16 for boys.

It appears that while the ninth grade teacher may be able to operate with similar motivating devices for both sexes, the teacher of upper classmen must allow for different activities and payoffs for boys and girls.

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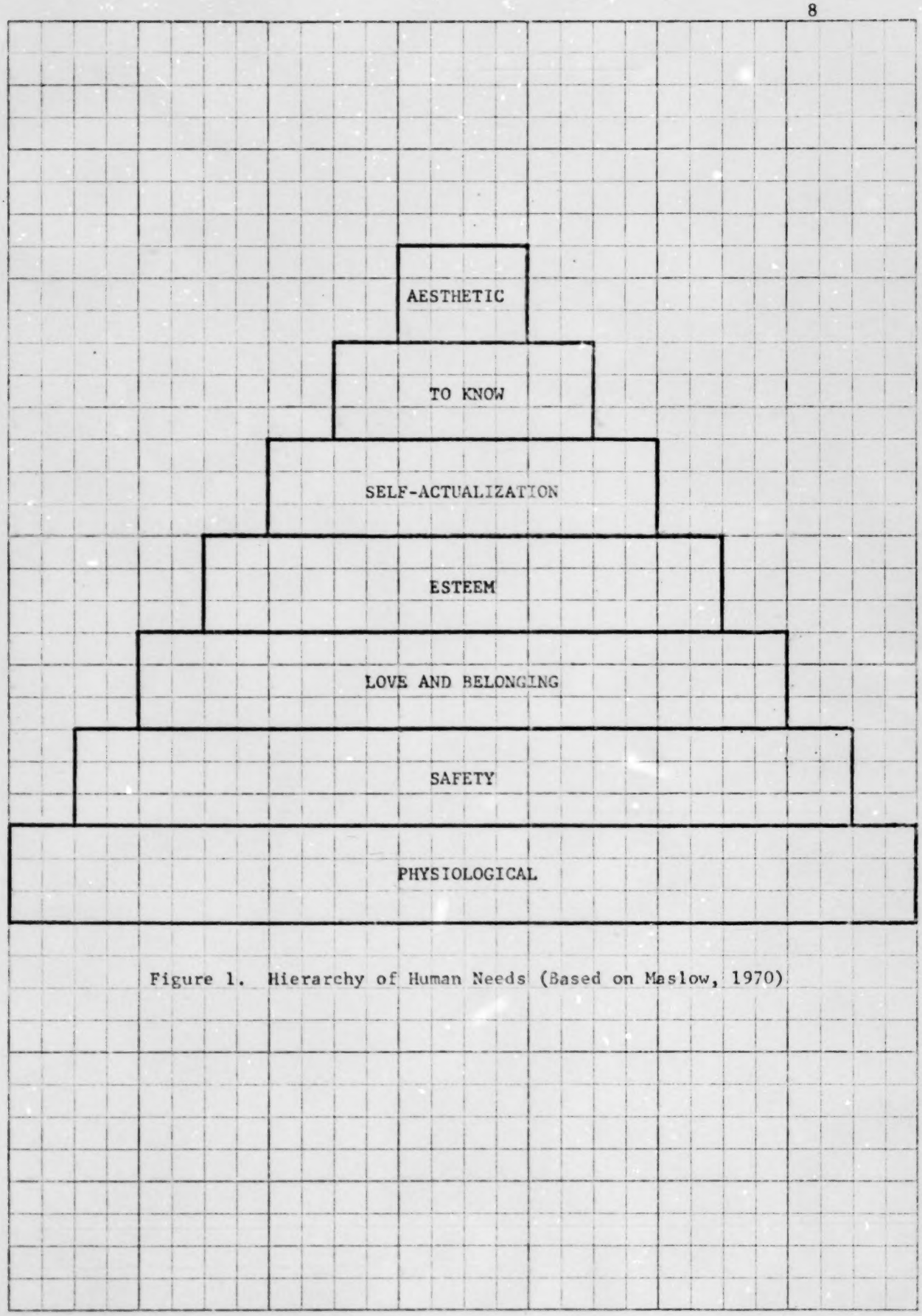

Figure 1. Hierarchy of Human Needs (Based on Maslow, 1970)

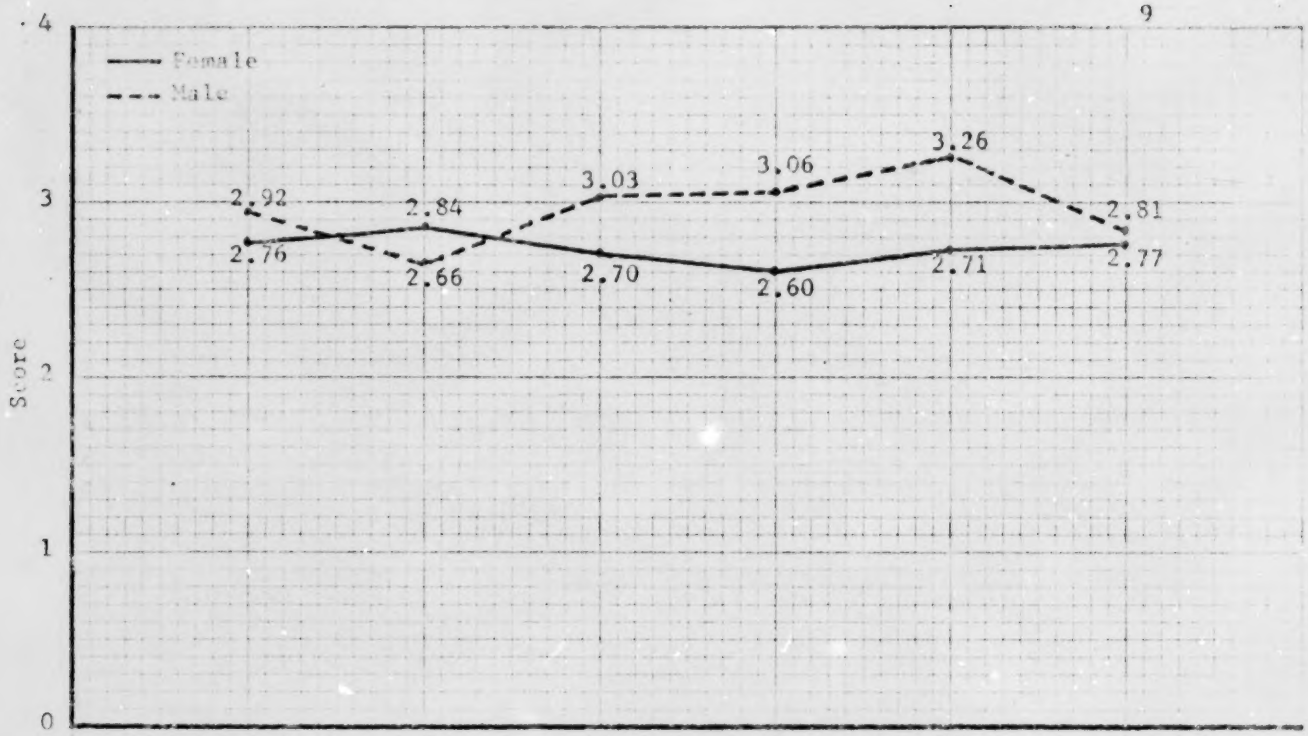

Figure 2. Mean "Need to Know" Scores by Sex and Year in School

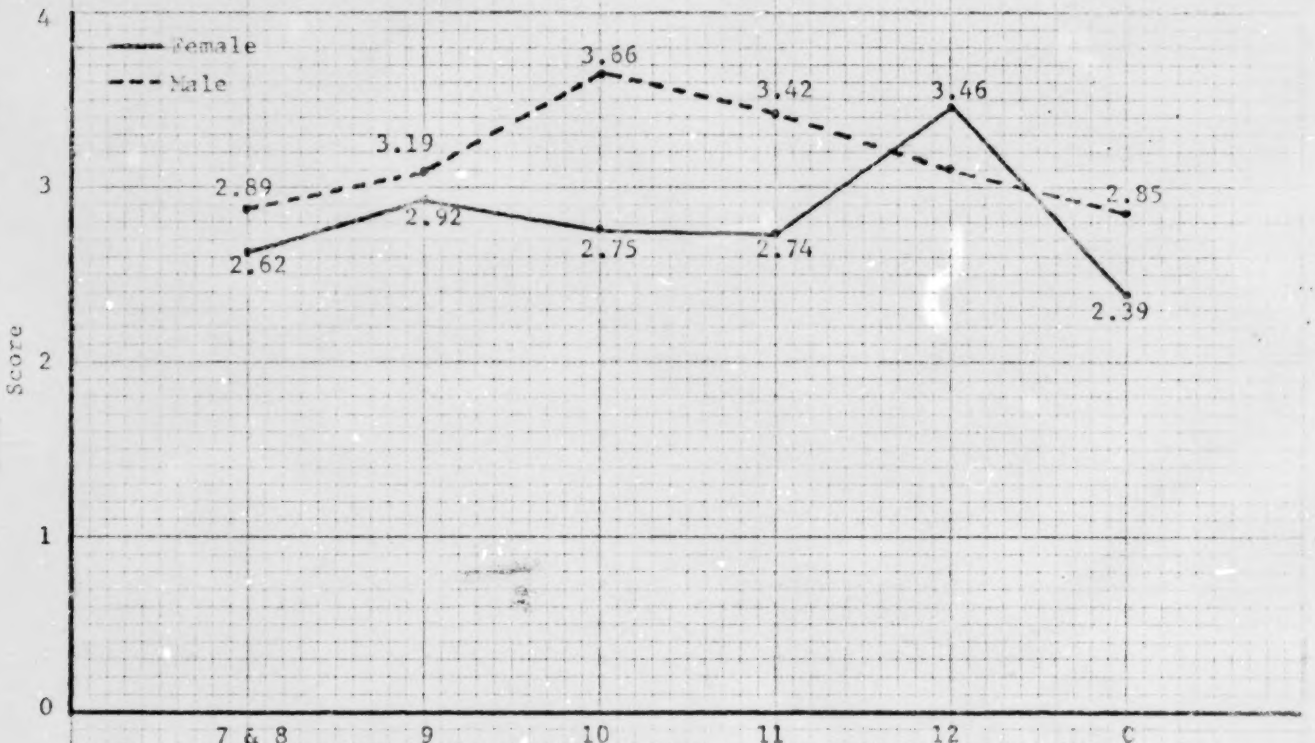

Figure 3. Mean Self-Actualization Scores by Sex and Year in School

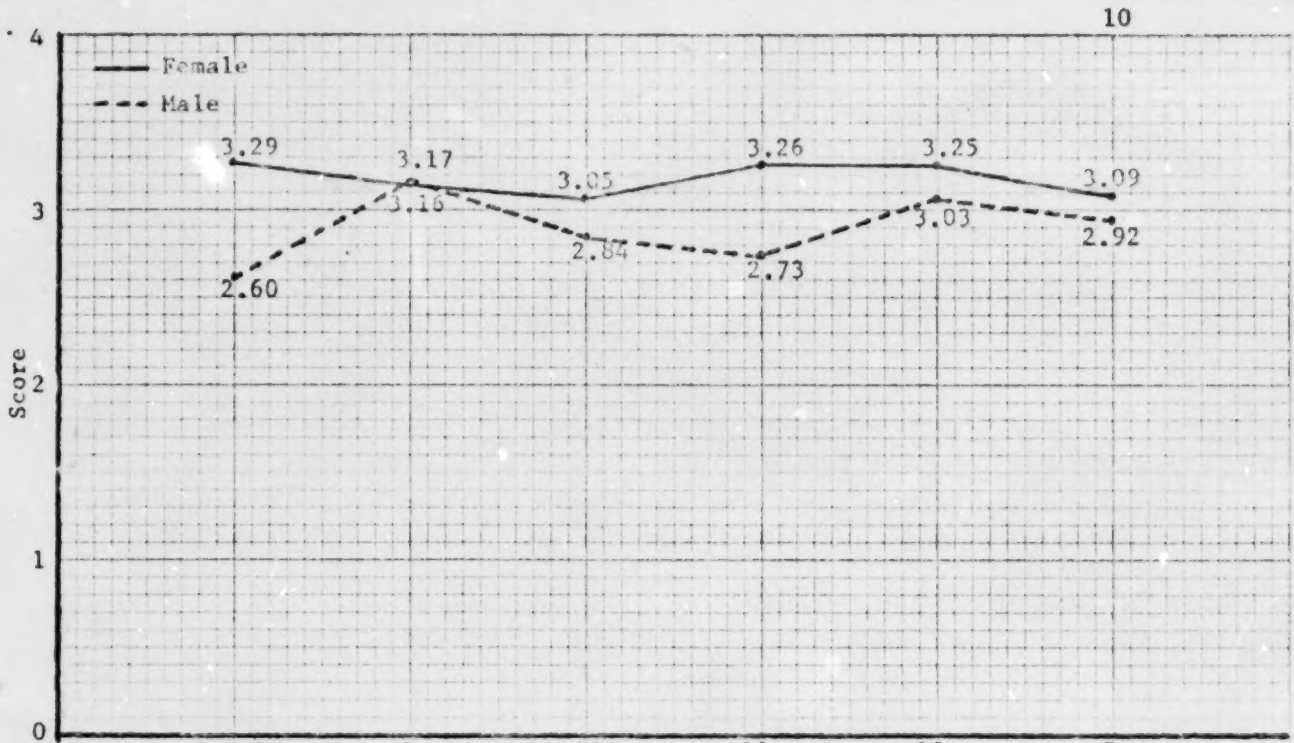

Figure 4. Mean Esteem Need Scores by Sex and Year in School

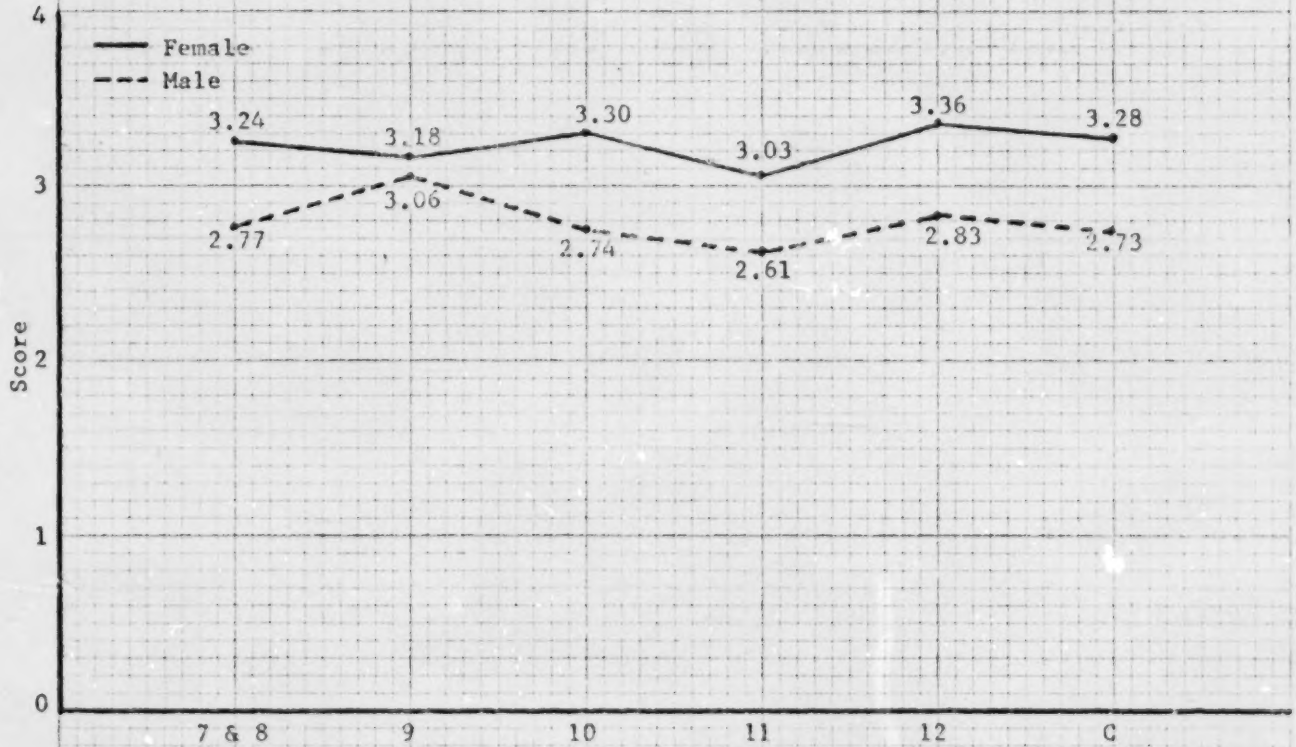

Figure 5. Mean "Love and Belonging" Need Scores by Sex and Year in School

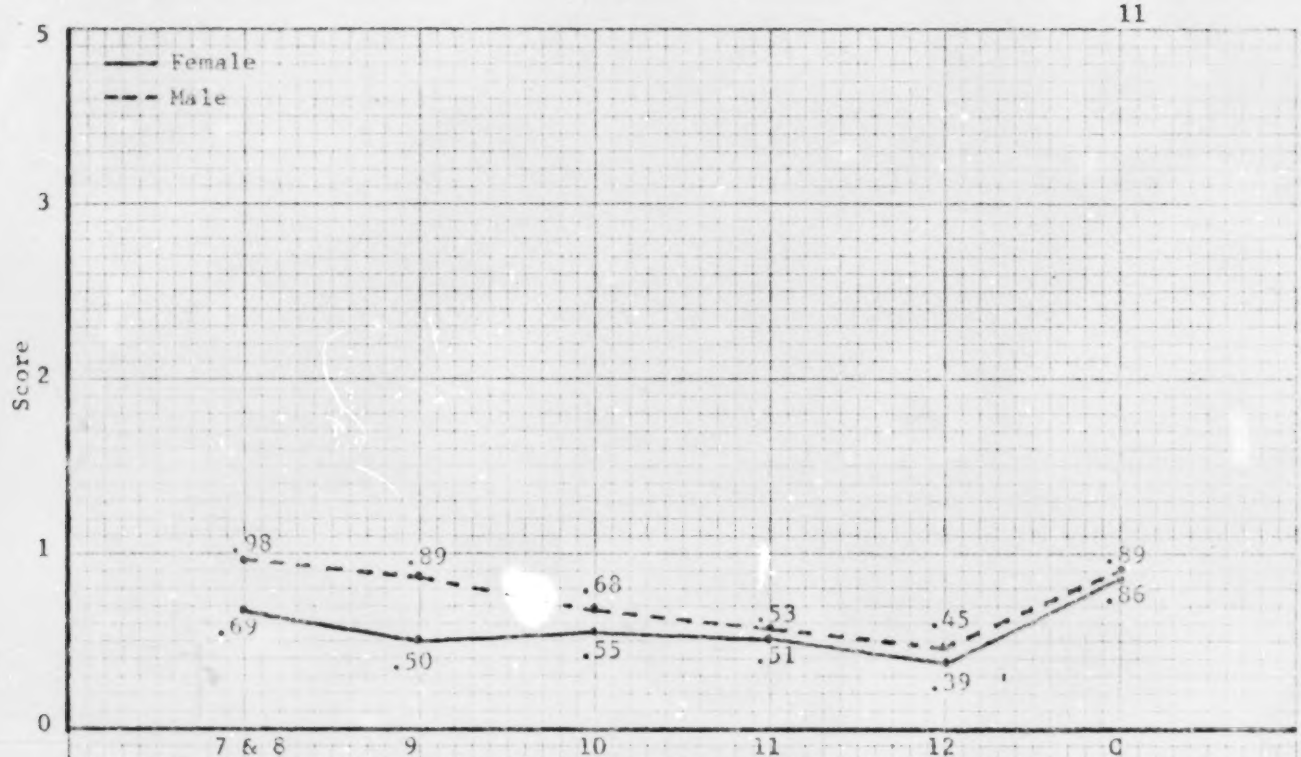

Figure 6. Mean Safety Scores by Sex and Year in School

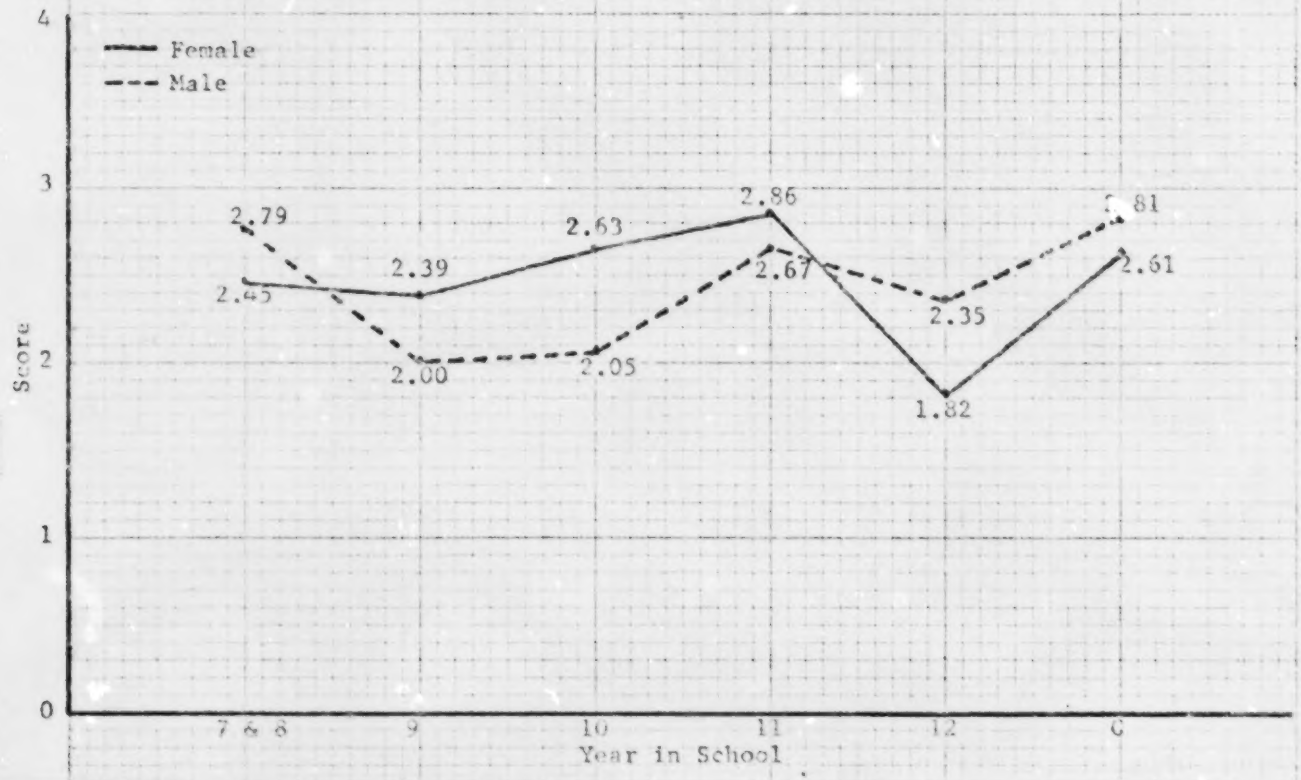

Figure 7. Mean Physiological Need Scores by Sex and Year in School

TABLE I

SIZE AND COMPOSITION OF SAMPLE BY GRADE IN SCHOOL AND SEX

Grade	Female	Male	Total
7 & 8	42	53	95
9	38	47	85
10	40	38	78
11	35	62	97
12	28	58	86
College Frosh	57	26	83
Total	240	284	524

TABLE II

PRODUCT MOMENT CORRELATIONS BETWEEN MOTIVE SCORES ON TWO ADMINISTRATIONS OF THE MOTIVATION INVENTORY TO 86 SEVENTH AND EIGHTH GRADERS

Need	Pearson r*
To Know	.655
Self-Actualization	.639
Esteem	.659
Love and Belonging	.595
Safety	.569
Physiological	.569
Composite Mean	.614

*All coefficients are significant at the .001 level.

TABLE III

MEAN MOTIVE SCORES BY YEAR IN SCHOOL AND SEX

Year in school	Sex	Motives					
		C	SA	E	L	S	P
7 & 8	F	2.76	2.62	3.29	3.24	.69	2.45
	M	2.92	2.89	2.60	2.77	.98	2.79
9	F	2.84	2.92	3.16	3.18	.50	2.39
	M	2.66	3.19	3.17	3.06	.89	2.00
10	F	2.70	2.75	3.05	3.30	.55	2.63
	M	3.03	3.66	2.84	2.74	.68	2.05
11	F	2.60	2.74	3.26	3.03	.51	2.86
	M	3.06	3.42	2.73	2.61	.53	2.67
12	F	2.71	3.46	3.25	3.36	.39	1.82
	M	3.26	3.10	3.03	2.83	.45	2.35
College Frosh	F	2.77	2.39	3.09	3.28	.86	2.61
	M	2.81	2.85	2.92	2.73	.89	2.81
Entire Population		2.87	2.99	3.01	2.99	.67	2.47